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## Medical Encyclopedia: Sepsis

URL of this page: <http://www.nlm.nih.gov/medlineplus/ency/article/000666.htm>

### Alternative names

Systemic inflammatory response syndrome (SIRS)

### Definition

Sepsis is a severe illness caused by overwhelming infection of the bloodstream by toxin-producing bacteria.

### Causes, incidence, and risk factors

Sepsis occurs in 2 of every 100 hospital admissions. It is caused by bacterial infection that can originate anywhere in the body. Common sites include the following:

- The kidneys (upper urinary tract infection)
- The liver or the gall bladder
- The bowel (usually seen with peritonitis)
- The skin (cellulitis)
- The lungs (bacterial pneumonia)

Meningitis may also be accompanied by sepsis. In children, sepsis may accompany infection of the bone (osteomyelitis). In hospitalized patients, common sites of infection include intravenous lines, surgical wounds, surgical drains, and sites of skin breakdown known as decubitus ulcers or bedsores.

The infection is often confirmed by a positive blood culture, though blood cultures may be negative in individuals who have been receiving antibiotics. In sepsis, blood pressure drops, resulting in shock. Major organs and systems, including the kidneys, liver, lungs, and central nervous system, stop functioning normally.

A change in mental status and hyperventilation may be the earliest signs of impending sepsis.

Sepsis is often life-threatening, especially in people with a weakened immune system or other medical illnesses.

### Symptoms

- Fever or hypothermia (low body temperature)
- Hyperventilation
- Chills
- Shaking
- Warm skin
- Skin rash
- Rapid heart beat (tachycardia)

- Confusion or delirium
- Decreased urine output

### Signs and tests

- White blood cell count that is low or high
- Platelet count that is low
- Blood culture that is positive for bacteria
- Blood gases that reveal acidosis
- Kidney function tests that are abnormal (early in the course of disease)

This disease may also alter the results of the following tests:

- Peripheral smear may demonstrate a low platelet count and destruction of red blood cells.
- Fibrin degradation products are often elevated, a condition that may be associated with a tendency to bleed.
- Blood differential -- with immature white blood cells seen

### Treatment

Septic patients usually require monitoring in an intensive care unit (ICU). "Broad spectrum" intravenous antibiotic therapy should be initiated as soon as sepsis is suspected.

The number of antibiotics administered may be decreased when the results of blood cultures become available and the causative organism is identified. The source of the infection should be discovered, if possible, which may mean further diagnostic testing. Sources such as infected intravenous lines or surgical drains should be removed, and sources such as abscesses should be surgically drained.

Supportive therapy with oxygen, intravenous fluids, and medications that increase blood pressure may be required for a good outcome. Dialysis may be necessary in the event of kidney failure, and mechanical ventilation is often required if respiratory failure occurs.

### Expectations (prognosis)

The death rate can be as high as 60% for people with underlying medical problems. Mortality is less (but still significant) in individuals without other medical problems.

### Complications

- Septic shock
- Impaired blood flow to vital organs (brain, heart, kidneys)
- Disseminated intravascular coagulation

### Calling your health care provider

Go to the emergency room or call the local emergency number (such as 911) if you suspect sepsis.

### Prevention

Many cases are not preventable. Awareness of risk may allow earlier detection.

**Update Date: 8/7/2002**

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